AFRL-SA-WP-TR-2013-0001

Commissioning Source and Personality Differences in U.S. Air Force Pilot Training

Erica Barto
Operational Technologies Corp., San Antonio, TX
Raymond E. King
U.S. Air Force School of Aerospace Medicine, Wright-Patterson AFB, OH
Paul Retzlaff
Eagle Applied Sciences, San Antonio, TX

September 2012

Final Report
for September 2011 –September 2012

Air Force Research Laboratory
711th Human Performance Wing
School of Aerospace Medicine
Aeromedical Research Department
2510 Fifth St.
Wright-Patterson AFB, OH 45433-7913

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REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. REPORT DATE *(DD-MM-YYYY)*	2. REPORT TYPE	3. DATES COVERED *(From – To)*
24 Sep 2012	Final Technical Report	September 2011 – September 2012

4. TITLE AND SUBTITLE

Commissioning Source and Personality Differences in U.S. Air Force Pilot Training

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)
Erica Barto, Raymond E. King, Paul Retzlaff

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
USAF School of Aerospace Medicine
Aeromedical Research/FHC
2510 Fifth St.
Wright-Patterson AFB, OH 45433-7913

8. PERFORMING ORGANIZATION REPORT NUMBER

AFRL-SA-WP-TR-2013-0001

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSORING/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT

Distribution A: Approved for public release; distribution is unlimited. Case Number: 88ABW-2013-0245, 18 Jan 2013

13. SUPPLEMENTARY NOTES

14. ABSTRACT

The general personality of pilots, the variability of personality within pilots, and the personality traits associated with success in pilot training are well known. However, no research has looked at the "upstream" pipeline personality. The current research examines personality differences as a function of commissioning source in male U.S. Air Force (USAF) pilots using two different personality tests, the NEO Personality Inventory-Revised and the Armstrong Laboratory Aviation Personality Survey. While future pilots receive their commissions through various commissioning programs, all USAF student pilots (pilot candidates) train together irrespective of their commissioning source. On the NEO Personality Inventory-Revised, those student pilots being commissioned based on graduation from the USAF Academy were the most open to new experience, agreeable, and the least extraverted and the least conscientious. Reserve Officers' Training Corps student pilots were more extraverted than the other two groups. Finally, Officer Training School (OTS) student pilots were the least neurotic and the most conscientious. Personality differences were also found across all commissioning sources on the Armstrong Laboratory Aviation Personality Survey. USAF Academy pilots were the most negativistic, affectively labile, anxious, depressed, dogmatic, and impulsive. They were also significantly lower than the other two groups on confidence, socialness, orderliness, team oriented, and organization. Reserve Officers' Training Corps student pilots were generally between the other two groups on most variables. Officer Training School student pilots were seen as orderly and organized with the lowest negativity, affective lability, anxiety, depression, and dogmatism of the three groups. There are striking differences in personality across the three major USAF student pilot accession sources.

15. SUBJECT TERMS
Aviators, personality testing, personnel selection, pilot training

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			Lt Col Raymond E. King
U	U	U	SAR	18	19b. TELEPHONE NUMBER *(include area code) (937) 938-3270*

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std. Z39.18

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TABLE OF CONTENTS

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1.0 SUMMARY

The general personality of pilots, the variability of personality within pilots, and the personality traits associated with success in pilot training are well known. However, no research has looked at the "upstream" pipeline personality. The current research examines personality differences as a function of commissioning source in male U.S. Air Force (USAF) pilots using two different personality tests, the NEO Personality Inventory-Revised and the Armstrong Laboratory Aviation Personality Survey. While future pilots receive their commissions through various commissioning programs, all USAF student pilots (pilot candidates) train together irrespective of their commissioning source. On the NEO Personality Inventory-Revised, those student pilots being commissioned based on graduation from the USAF Academy were the most open to new experience, agreeable, and the least extraverted and the least conscientious. Reserve Officers' Training Corps student pilots were more extraverted than the other two groups. Finally, Officer Training School student pilots were the least neurotic and the most conscientious. Personality differences were also found across all commissioning sources on the Armstrong Laboratory Aviation Personality Survey. USAF Academy pilots were the most negativistic, affectively labile, anxious, depressed, dogmatic, and impulsive. They were also significantly lower than the other two groups on confidence, socialness, orderliness, team oriented, and organization. Reserve Officers' Training Corps student pilots were generally between the other two groups on most variables. Officer Training School student pilots were seen as orderly and organized with the lowest negativity, affective lability, anxiety, depression, and dogmatism of the three groups. There are striking differences in personality across the three major USAF student pilot accession sources.

2.0 INTRODUCTION

2.1 Commissioning Sources and Procedures

U.S. Air Force (USAF) student pilots come from three major sources: the USAF Academy (USAFA), the Reserve Officers' Training Corps (ROTC), and the USAF Officer Training School (OTS). USAFA is the Air Force's service academy located in Colorado Springs, CO. High school students compete for the opportunity to pursue a 4-year degree and a military commission. The USAFA curriculum is based on four pillars: academics, military training, athletics, and character development. Cadets are commissioned as second lieutenants into the USAF upon graduation from USAFA. ROTC is offered at civilian universities across the nation, allowing students to complete coursework in a major of their choice while undergoing military indoctrination and training. Students may receive 2- or 4-year scholarships to assist with the cost of their education. ROTC cadets are also commissioned as second lieutenants upon graduation. Finally, the USAF OTS program, based at Maxwell Air Force Base, AL, is a 12-week program but requires a college degree to apply. The number selected into OTS changes, depending on the needs of the USAF.

Regardless of commissioning source, all applicants for pilot training must pass the same rigorous Class I flight physical standards to be medically eligible for selection. Then, each commissioning source considers measures of aviation aptitude and officership. USAFA cadets are selected by Academy faculty and staff who take into account academic [e.g., grade point average (GPA)], physical, and military performance. Applicants who are commissioned through

ROTC or OTS, including the Airman Education and Commissioning Program, are administered the Air Force Officer Qualifying Test (AFOQT) (Ref 1) and the Test of Basic Aviation Skills (Ref 2). The AFOQT pilot composite, several Test of Basic Aviation Skills scores, and flying experience are combined in a regression-weighted equation to create a measure of pilot training aptitude called the Pilot Candidate Selection Method. For ROTC, medically qualified pilot training applicants are ranked on their Order of Merit scores. This score is based on the Pilot Candidate Selection Method score, field training, physical fitness, college GPA, and commander's ranking. OTS selection is based on the "whole person" concept, where applicants receive points over three areas: experience/leadership, education/aptitude, and potential/adaptability. A theme throughout all of these selection procedures is high intelligence, whether it involves USAFA acceptance, a high GPA, a high AFOQT score, or the impression a candidate makes on a selection board member.

2.2 Pilot Personality

Retzlaff and Gibertini (Ref 3) used a test of normal personality, the Personality Research Form (PRF) (Ref 4), and a test of clinical psychopathology, the Millon Clinical Multiaxial Inventory (MCMI) (Ref 5), to map the personality of students in USAF pilot training. The 350 student pilots scored higher than college students on the PRF scales of *Dominance*, *Cognitive Structure*, and *Affiliation* and lower on *Autonomy*, *Harm Avoidance*, *Abasement*, and *Understanding*. The student pilots scored high on the MCMI scales of *Narcissistic Personality Disorder* and *Histrionic Personality Disorder*. The two tests generally converged, showing student pilots as socially outgoing, organized, confident, and risk taking.

Retzlaff and Gibertini (Ref 6) used the same sample to examine personality clusters and found three different types of personalities among USAF student pilots. The first cluster, called Right Stuff students, included those who scored high on the PRF *Affiliation*, *Aggression*, *Exhibition*, *Impulsivity*, and *Play* scales. They scored low on the *Cognitive Structure* and *Order* scales but high on the *Histrionic*, *Narcissistic*, and *Antisocial* scales of the MCMI. Cluster two students scored high on the *Achievement*, *Affiliation*, *Endurance*, and *Social Desirability* scales but low on *Dependence*. In addition, they had moderate *Narcissistic* and *Histrionic* scores and high *Compulsive Personality Disorder* scores on the MCMI. Finally, the third cluster called Wrong Stuff had students without high PRF scores but with low scores on *Affiliation*, *Change*, *Dominance*, and *Exhibition*. They had high *Compulsive* and low *Histrionic* scores on the MCMI. These results show that, within their group, pilots have very different personalities. Moreover, these MCMI results do not necessarily indicate the presence of psychopathology. King (Ref 7) found that clinically referred pilots with elevated personality disorder scales were independently found by examining psychiatrists to be free from psychopathology, except in cases of elevated *Dependent* or *Avoidant Personality Disorder* scales.

Callister et al. (Ref 8) used the NEO Personality Inventory-Revised (NEO PI-R) (Ref 9) to compare the personality characteristics of 1,301 USAF student pilots. This study shows the personality differences that exist between pilots and the average population. When compared to male adult national norms, the student pilots scored higher on *Extraversion* and lower on *Agreeableness*. The student pilots had mean *Extraversion* scores at the 83rd percentile of the national norm, *Openness* scores at the 60th percentile, *Conscientiousness* scores at the 58th percentile, *Neuroticism* scores at the 42nd percentile, and *Agreeableness* scores at only the 20th percentile.

Personality differences have also been examined in pilot and normative samples by gender. Chappelle et al. (Ref 10) found that female student pilots had lower scores on *Neuroticism* than the female normative sample but higher *Neuroticism* scores than male student pilots. Male and female student pilots scored substantially lower on *Extraversion* than the female normative sample. Female student pilots scored higher than the female normative sample or the male student pilots on *Openness to Experience*, lower than the female normative sample on *Agreeableness*, and higher than the male student pilots on *Agreeableness*. Finally, female student pilots had higher scores than their normative counterpart but somewhat less than male student pilots on *Conscientiousness*.

2.3 USAF Pilot Training Personality Outcomes Research

It is necessary to bear in mind the degree to which personality might play a role in pilot training outcomes. Several meta-analyses have been performed to estimate the relationship between personality and pilot training criteria. For example, Hunter and Burke (Ref 11) found a small correlation of 0.10 for personality as a predictor of flying training criteria. Martinussen's meta-analysis (Ref 12) found a 0.14 correlation with a pass/fail criterion and 0.11 with performance outcomes. More recently, Campbell et al. (Ref 13) conducted a meta-analysis on eight studies using variables consistent with the NEO PI-R that investigated the effects of personality for predicting pilots' outcomes in training. They found negative correlations for *Neuroticism* (-0.15) and *Anxiety* (-0.11). *Extraversion* was positively correlated to the training outcome with an average uncorrected correlation of 0.13. In general, the relationships between personality and pilot training outcomes are small; however, they are consistent with findings that show uncorrected correlations in the low teens.

King et al. (Ref 14) examined the relationship between personality tests and USAF pilot training outcomes. Two tests were used: the NEO PI-R and the Armstrong Laboratory Aviation Personality Survey (ALAPS). In addition to the traditional pass/fail training outcome, the *quality* of passing and reasons for failure were examined. Outcome criteria for training graduates included class rank, academic grades, daily flying grades, and check ride grades. Reasons for failure included flying training deficiency and being "Dropped on Request." Correlations in samples of between 6,200 and 12,548 trainees across the tests showed small, but important, relationships with training outcomes. Compared to those passing training, students who failed due to flying training deficiency were less extraverted and less confident as well as more depressed and more deferent. Compared to passing students, those who Dropped on Request were less aggressive, less impulsive, and less risk taking. They were also more generally neurotic, more orderly, more affectively labile, and more anxious. Higher class rank was associated with higher levels of conscientiousness and confidence as well as lower levels of negativity, affective lability, anxiety, and depression.

2.4 Purpose

The purpose of the present study was to examine the personality characteristics of pilots as a function of commissioning source. While general pilot personality, the variability of pilot personality, and the personality characteristics of those pilots who succeed at training have been established, the degree to which these findings are related to accession sources is unknown. As such, the current study looks at the personality of pilots coming from USAFA, ROTC, and OTS.

Further, two different personality tests are used to ensure that the results are generalizable and not attributable to a single test.

3.0 THE NEO PI-R

The NEO PI-R is a measure of the "Five Factor" or "Big Five" model of personality structure. The NEO PI-R is a test designed to measure normal personality characteristics in relatively high functioning people. It is not a test of psychopathology. It was developed as a multipurpose personality inventory and is commercially available (Ref 9). It consists of 240 statements to which the evaluee responds on a scale from 1 to 5 that represents "strongly disagree," "disagree," "neutral," "agree," or "strongly agree." The test is not timed. Participants generally take from 30 to 40 minutes to complete the test.

The NEO PI-R provides a number of scores. There are five "domain" level scores that include *Neuroticism*, *Extraversion*, *Openness to Experience*, *Agreeableness*, and *Conscientiousness*. Table 1 presents the NEO PI-R scales and their descriptions. As can be seen, a broad range of personality is assessed. There are also six "facet" scores under each domain. So, for example, under the domain of *Neuroticism* there are the subscales of *Depression* and *Anxiety*. However, only the five domain scales are used in the current work consistent with prior work and conservative statistical philosophy. Reliabilities for domain scores range from .86 to .92. The validity of the NEO PI-R has been evaluated extensively and is summarized in the test manual (Ref 9).

Table 1. Descriptions of the NEO PI-R Scales (from Ref 9)

Domain	Definition
Neuroticism (*N*)	The tendency to experience negative emotions (anger, sadness, fear) and be emotionally unstable
Extraversion (*E*)	The enjoyment of social situations, excitement, and stimulation
Openness to Experience (*O*)	A willingness to explore new ideas and values; desire for aesthetics
Agreeableness (*A*)	The desire to sympathize with and help others
Conscientiousness (*C*)	Seeking a high level of organization and planning; the tendency to plan carefully and exercise self-discipline

3.1 Participants

Participants were 7,980 male pilot training students. All were college graduates or were near completion of college. Participants had a mean age of 24 years, and 99% were 30 years of age and under. Ninety-two percent reported that they were white. All participants were tested at either the USAF School of Aerospace Medicine or USAFA.

3.2 Procedure

The NEO PI-R was administered to the pilot training students prior to entry into Specialized Undergraduate Pilot Training, during a screening process described by King and Flynn (Ref 15). Descriptive data [means and standard deviations (SDs)] were computed for all scale scores. Analysis of variance (ANOVA) was computed to compare the commissioning sources by NEO PI-R domain scores.

3.3 Results

Table 2 provides the means, SDs, ANOVAs, and paired comparison tests for the NEO PI-R across the three accession sources. The standardized means of the NEO PI-R scales for the general population are 50 with SDs of 10. The means seen here are all within 1 SD of the general mean, and the SDs here are very close to 10. The descriptive statistics are well behaved and consistent with those found in other USAF NEO PI-R studies such as those reviewed in the introduction of this paper.

Table 2. NEO-PI-R Means and SDs with ANOVAs by Commissioning Source

Domain	ROTC (N=4,370)		OTS (N=1,352)		USAFA (N=2,258)		F	Scheffe[a]
	Mean	SD	Mean	SD	Mean	SD		
Neuroticism	46.73	9.19	45.00	8.66	47.37	10.14	27.71[b]	O R A
Extraversion	58.22	9.38	57.22	9.09	55.98	10.64	39.86[b]	A O R
Openness	50.32	10.03	50.07	9.59	51.43	10.90	11.00[b]	O R A
Agreeableness	43.24	10.38	43.64	10.10	46.43	11.78	67.99[b]	R O A
Conscientiousness	55.53	10.02	56.70	9.32	52.14	11.20	110.25[b]	A R O

[a]R = ROTC, O = OTS, and A = USAFA; underlined groups are NOT significantly different.
[b]$p<.01$

As can be seen, all five of the personality variables are significant. Further, a great many of the paired comparisons show significant differences between pairs of groups. Interpreting the table from a group perspective rather than a variable perspective, the USAFA participants are significantly higher than the other two groups on *Openness* and *Agreeableness*. They are also lower than the other two groups on *Extraversion* and *Conscientiousness*. The OTS participants are higher than the other two groups on *Conscientiousness* and lower on *Neuroticism*. Finally, the ROTC participants are higher than the other two groups on *Extraversion*.

A remarkable number of differences are found here. The magnitude of those differences, however, is perhaps best viewed as modest. The differences are between one and four points, with SDs of about 10. As such, while many differences are found, only a few will be found to be of clinical, administrative, or selection utility.

4.0 THE ARMSTRONG LABORATORY AVIATION PERSONALITY SURVEY

The ALAPS (Ref 16,17) was specifically developed to support the USAF pilot screening program. It sought to address a number of problems with "off-the-shelf" tests when used with pilots and pilot candidates. It was designed to provide a single, brief test of aviation-relevant variables. After consulting with practicing aviation clinicians and reviewing the research literature and selection procedures for the USAF and National Aeronautics and Space Administration, a number of potential scales were identified. The scales were developed through a series of rigorous psychometric steps using USAF student pilot data for item and scale development. The surviving and resulting scales were seen as suitable for "select in," "select out," and clinical evaluation purposes. In sum, the intent was to build a reliable and valid test with scales and items relevant to aviation personnel selection and clinical assessment.

The 240 items are administered by paper-and-pencil or computer and require participants to respond "true" or "false" to each item as it applies to them. The ALAPS has 15 scales that are categorized as either "Personality," "Psychopathology," or "Crew Interaction." The Personality scales include *Confidence, Socialness, Aggressiveness, Orderliness,* and *Negativity*. The Psychopathology scales include *Affective Lability, Anxiety, Depression,* and *Alcohol Abuse*. Finally, the Crew Interaction scales include *Dogmatism, Deference, Team Oriented, Organization, Impulsivity,* and *Risk Taking*. Table 3 presents the previously reported (Ref 16) descriptions for the 15 ALAPS scales.

The scales all have reliabilities of .70 and greater. These reliabilities were calculated using student pilots. Further, validities are high and appropriate against other scales of similar content (Ref 17).

4.1 Participants

Participants were 4,850 male pilot training students. As with the NEO PI-R, all were college graduates or were near completion of college. Participants had a mean age of 24 years, and 99% reported that they were 30 years of age or under. Ninety-two percent reported that they were white. All participants were tested at either the USAF School of Aerospace Medicine or USAFA.

4.2 Procedure

The ALAPS was administered to the pilot training students prior to entry into Undergraduate Pilot Training. As with the NEO PI-R, descriptive data (means and SDs) were computed for all scale scores. ANOVA was computed to compare the commissioning sources by ALAPS subtest scores.

4.3 Results

Table 4 provides the means, SDs, ANOVAs, and paired comparison tests for the ALAPS across the three accession sources. ALAPS scores are raw, and there are no standardized means or SD for general populations, as the ALAPS was developed and normed specifically on pilot candidates. The descriptive statistics found in Table 4, however, are consistent with prior USAF studies using the ALAPS (Ref 16,17).

Table 3. Descriptions of the ALAPS Scales

Scale	Definition
	Personality
Confidence	High scorers view themselves as highly capable, intelligent, and talented. This can include the negative elements of arrogance, manipulation, and condescension. Clinically these traits may suggest narcissism.
Socialness	High scorers are extremely social and outgoing. They enjoy others and are socially comfortable. They see themselves as friendly and charming. Clinically this may include elements of histrionic personality.
Aggressiveness	High scorers are assertive to the point of being aggressive. They take strong stands and tolerate little criticism. They are verbally and emotionally combative. This quality probably does not rise to the level of antisocial personality.
Orderliness	High scorers are orderly in a behavioral and environmental way. Their lives are structured and neat. They are methodical and disciplined. This may clinically rise to the level of compulsive personality disorder.
Negativity	High scorers are angry, negative, and cynical. They are socially punitive and not pleasant to be around. Clinically this may rise to the level of negativistic or passive aggressive personality.
	Psychopathology
Affective Lability	High scorers are generally emotional and reactive. They can be situationally anxious, depressed, and frightened. Moods are seen as changing quickly with little provocation. Affect is volatile.
Anxiety	High scorers are chronically anxious. They worry and brood. The anxiety interferes with their lives and occupational functioning.
Depression	High scorers are depressed. Problems include dysphoric affect as well as the cognitive and vegetative symptoms of depression. They report being pessimistic, unhappy, and guilty. Extreme elevations may include clinical major depression.
Alcohol Abuse	High scorers like to drink, drink a great deal, and get intoxicated. Functioning is impaired and there may be social and occupational problems.
	Crew Interaction
Dogmatism	High scorers believe what they believe is always correct and are not open to change. They are authoritarian interpersonally. They are intolerant of other people, ideas, and actions.
Deference	High scorers are deferent to a fault. They are submissive and quiet. They concentrate on their job and are uncomfortable questioning the status quo.
Team Oriented	High scorers enjoy and believe in teamwork. They value the team effort and team rewards. They do not enjoy working alone and may be inefficient when working alone.
Organization	High scorers are systematic and organized. They coordinate and plan all elements of a project. They think things through thoroughly.
Impulsivity	High scorers act first and think second. They often act and talk without sufficient forethought. They see themselves as spontaneous. Others may be less generous in their assessment.
Risk Taking	High scorers enjoy danger and risk. New activities and situations are not frightening. They are adventurous, unafraid, and fun-loving. They are not necessarily impulsive about their activities; their actions may be calculated and include a rational appreciation of the inherent danger.

Table 4. ALAPS Means and SDs with ANOVAs by Commissioning Source

Scale	ROTC (N=2,668)		OTS (N=980)		USAFA (N=1,202)		F	Scheffe[a]
	Mean	SD	Mean	SD	Mean	SD		
Personality								
Confidence	9.96	2.805	10.06	2.802	9.49	3.180	22.87[b]	A R O
Socialness	12.96	3.202	12.86	3.124	12.40	3.843	12.27[b]	A O R
Aggressiveness	9.29	2.863	9.14	2.947	9.50	3.207	2.21	n/a
Orderliness	12.42	3.184	12.80	2.963	11.27	4.217	68.34[b]	A R O
Negativity	5.08	3.058	4.64	2.963	6.09	3.355	73.93[b]	O R A
Psychopathology								
Affect Lability	3.89	3.383	3.41	3.091	4.89	3.896	74.46[b]	O R A
Anxiety	1.98	3.077	1.60	2.661	2.44	3.621	25.62[b]	O R A
Depression	1.13	1.765	0.84	1.355	2.14	2.682	166.10[b]	O R A
Alcohol Abuse	7.86	3.864	7.51	3.715	6.92	4.195	37.09[b]	A O R
Crew Interaction								
Dogmatism	5.83	2.882	5.41	2.756	6.19	3.174	16.88[b]	O R A
Deference	6.34	2.722	6.38	2.595	6.60	3.208	4.61[b]	R O A
Team Oriented	12.27	3.507	12.39	3.370	11.24	4.245	49.81[b]	A R O
Organization	12.86	3.039	13.22	2.959	11.63	3.957	79.89[b]	A R O
Impulsivity	6.87	3.533	6.81	3.576	7.61	4.104	19.28[b]	O R A
Risk Taking	12.63	2.639	12.50	2.777	12.63	2.945	1.06	n/a

[a] R = ROTC, O = OTS, and A = USAFA.
[b] $p<.01$

As with the NEO PI-R, a remarkable number of scales have significant differences, with 13 of the 16 scales showing significant ANOVAs. A quick look at the paired comparison tests again shows the USAFA participants to be the most "different" from the other two groups. Indeed, the USAFA subjects were higher than the other two groups on *Negativity*, *Affective Lability*, *Anxiety*, *Depression*, *Dogmatism*, and *Impulsivity*. They were also lower than the other two groups on *Confidence*, *Socialness*, *Orderliness*, *Alcohol Abuse*, *Team Oriented*, and *Organization*. The OTS participants were higher than the other two groups on *Orderliness* and *Organization*. They were also lower than the other two groups on *Negativity*, *Affective Lability*, *Anxiety*, *Depression*, and *Dogmatism*. Finally, the ROTC group was generally in the middle of the other two groups on the variables and was neither significantly higher nor lower than the other two groups on any of the variables.

Again, the reader is cautioned by the magnitude of these many differences. Several of the differences are no more than a half point difference with SDs of 3. Additionally, the "psychopathology" scales often have means of only a point or two. However, scales such as *Organization* remain quite interesting, with mean differences of almost half the SDs.

5.0 DISCUSSION

This work sought to examine commissioning source/accession personality differences of student pilots. Differences were found across all three accession sources and across two personality tests. Indeed, the large number of scales found to differentiate the three groups was striking.

USAFA participants were found to be the most unique. They were found to be most open to new experiences and to be the most agreeable. They did, however, display a great many interesting characteristics compared to the other two groups. They were less extraverted, social,

and team oriented than the other groups. They were also more affective with small but higher levels of anxiety and depressive affect. Interestingly and counter-intuitively, they were also the least conscientious, orderly, and organized, as well as the most impulsive.

ROTC participants were between the other two groups on most variables. They were found to be the most extraverted on one of the tests.

OTS participants were more conscientious, orderly, and organized than the other two groups. They were also the lowest on the affective types of scales such as *Anxiety*, *Depression*, and *Affective Lability*.

There are three possible explanations for the differences found here. The first is an artifact of the data collection, and the second two are a result of the personnel selection methods of the accession sources. The USAFA participants were tested at a different point in training than the other two groups. The USAFA participants were tested during their junior year at USAFA. Two things may have consequently impacted the results. First, any day at USAFA, with the possible exception of graduation day, is stressful and demanding. Cadets are cognitively and emotionally challenged at all times, and the testing results, particularly the affective scales, may have been reflecting that situational emotional stress. Other scales, however, such as *Socialness* and *Organization*, are probably more trait-like and less susceptible to situational challenges. The other issue with testing in the junior year is that the participants had not yet been assured of a pilot slot. Since most desire to become pilots, the situation of being tested knowing they are not assured of a pilot slot could have affected the results.

The second explanation of the results found here is that the three accession sources select their students at vastly different point in the students' lives. Oddly, while USAFA is a highly respected institution, it is forced to select students who are juniors in high school, still girls and boys. While many have well-established intellectual, emotional, and leadership histories by that point, the fact remains that the "track record" represents only a few, short years. ROTC, on the other hand, draws from a very large number of college students. Additionally, with 4 years of ROTC training, weak candidates are allowed to drop the program and strong candidates are given 3 or 4 years of college level work to prove themselves. Finally, OTS students are chosen either toward the end of college or after college and have strong and impressive enlisted careers. As such, they also have a long history with which to prove themselves. In their case, they are not only screened through a college program but also have a military background; indeed, they would not be recommended by their commands if they were not considered psychologically solid and "squared away."

The third explanation follows the second and goes to who within the programs is chosen for a coveted pilot slot. The mandate of USAFA is to train career USAF leaders. Since it is an air force, careers in the air are the most beneficial to the USAF and to the careers of individuals. As such, the majority of USAFA graduates are assigned flight school slots upon graduation. Indeed, there are relatively few things that will keep a USAFA graduate from going to flight school. The result is that there is relatively little further selection for pilot training after initial admission to the Academy. The situation is very different with ROTC and OTS. In the case of ROTC, most university units are given only one pilot slot per graduating class. If there are 30 or 40 graduates, only the very best will be sent off for flight training. That individual usually is an engineering major with a high GPA, has excellent (or at least the best) interpersonal skills, has consistently shown leadership within the unit, and has strong military bearing. The situation is similar with OTS. Most OTS graduates are not offered pilot training slots. Those who are

offered pilot training slots, again, have the strongest academic, interpersonal, emotional, and military assets.

There are a number of limitations to this study. The first has already been addressed: *where* participants were tested. USAFA participants were tested at a different point in the pipeline. Another limitation is that we had too few females to include them in this study. As noted in the introduction, male and female student pilots differ with respect to personality. As such, we would have needed to perform separate gender analyses requiring very large numbers of female participants.

Future work should look at personality testing at multiple points in the accession pipeline for all three groups. This procedure would include testing USAFA participants again after graduation from USAFA and testing ROTC participants during their junior year. This method would better delineate those scales that are susceptible to situational factors, or at least keep this potential variable constant across at least two of the three groups. Further work looking at personality as a predictor of USAF pilot training outcome should include commissioning source as a covariate. This method could increase the predictive power of personality tests and result in the inclusion of personality testing results in personnel selection decisions for pilot training selection.

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LIST OF ABBREVIATIONS AND ACRONYMS

ALAPS	Armstrong Laboratory Aviation Personality Survey
NEO PI-R	NEO Personality Inventory – Revised
OTS	Officer Training School
ROTC	Reserve Officers' Training Corps
USAF	United States Air Force
USAFA	United States Air Force Academy